

# THE BIRDS OF FLINDERS ISLAND

WITH REFERENCES TO OTHER EASTERN BASS STRAIT ISLANDS  
AND ANNOTATED LISTS OF OTHER VERTEBRATE FAUNA

by

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*Manuscript received 3/5/69.*

*Published 30/6/69.*

## ABSTRACT

A study of the birds on Flinders Island was undertaken by the Queen Victoria Museum during four visits in 1966 and 1967. As a result 128 bird species are recorded from Flinders Island and its coastal waters. Limited collecting has resulted in the acquisition of 166 bird skins of 41 species. An additional nineteen species have been acquired by other means.

Eighty-eight species have been found to breed locally.

Pastoral development of the island is reducing the natural habitat but most species remain plentiful in unaffected areas. Species dependent on open grassland have benefited from land clearing; plovers and the introduced sky lark have increased greatly. The Cape Barren goose also appears to have increased considerably and to be benefiting from pasture improvement which is providing it with a better diet.

A number of species appear to have been incorrectly included in the island's avifauna. Some sedentary species which occur both in south-eastern Australia and Tasmania are absent and some common trans-Bass Strait migrants apparently occur as transitory species only.

Observations on the mammals, amphibians, reptiles and freshwater fishes are also recorded.

## INTRODUCTION

Flinders Island is the largest of the Furneaux Group, which consists of about fifty islands in eastern Bass Strait. These islands were connected to Tasmania and Victoria by land bridges when the sea level dropped during the Pleistocene (Jennings 1959) and in Tertiary times (Bock and Glenie 1965).

Their present isolation as islands makes the affinities of their fauna of particular interest, while their geographical position is also significant because it makes them obvious "stepping stones" for birds which migrate between Victoria and Tasmania.

The ecology and evolution of the avifauna of the area are discussed by Ridpath and Moreau (1966) and Serventy (1967) discusses the Bass Strait islands and their fauna. The geology of Flinders Island has been studied by Kershaw and Sutherland (unpub. ms.). The Victorian Field Naturalists Club visited the area in 1893 (Gabriel 1894). The Australasian Ornithologists' Union visited the Furneaux Group in the course of an expedition to the islands of Bass Strait in 1908 (White 1909) and a 24-page pictorial coverage of the places visited was published by the A.O.U. in 1908. Nevertheless, published observations of the island's avifauna remain few.

With the advent of modern land clearing methods, agricultural development is rapidly reducing the natural environment and extensive areas of swamp land and other natural habitats have been replaced by open pastoral land sown to introduced grasses (Pryor 1967a).

To gain a more extensive knowledge of the local fauna, the author made four visits to Flinders Island and collected specimens and information wherever possible. The first visit was from 14 - 25 March 1966 when, with the assistance of J. W. Swift, Technical Assistant, a series of 131 birds covering 29 species was collected for the Queen Victoria Museum, Launceston with a few mammal, amphibian, reptile and fish specimens. A number of field observations were made on the birds. Succeeding visits were made by the author alone during 10 - 16 November 1966, 18 - 23 September 1967 and 23 - 27 November 1967 when 35 bird skins comprising 12 bird species were added to the former series with other vertebrate species.

#### METHODS AND SOURCES OF DATA

Collecting in March was carried out in two areas; Bob Smith's Gully in the foot hills of the Strzelecki ranges and on "Dallen," the no. 1 settlement block at Memana (see map figure 1, plates 1 and 2 and description of sites below). Selected specimens were collected by shooting and netting, the surplus netted birds being released unharmed after examination.

Standard measurements, breeding and age data, stomach contents, and ephemeral colours of the specimens were recorded and searches made for both external and internal parasites. A number of species were observed and recorded in addition to those collected.

Reliable observers who have resided on Flinders Island for varying periods were interviewed and their observations and opinions are acknowledged in the species list. They include Mr. David Rhodes (D.M.R.), Mr. Alex Dalglish (A.D.), Mr. John Nield (J.B.N.), Mrs. Iola Fowler (R.M.F.) and Mr. Athol Dart. Mr. A. D. Selby of Gunbower, Victoria spent two weeks on the southern end of Flinders Island towards the end of November 1952 and he has kindly supplied me with a copy of the species list he made on that occasion. All references to his sightings are confined to that visit.

It is natural that some migratory birds, additional to those species mentioned in the text, do occur in the area but unless such occurrences have been reported by a competent observer they have been omitted from the present list. Though the original area of the investigation was Flinders Island, additional references have been cited for other Bass Strait islands when considered of sufficient importance to warrant inclusion.

The bird nomenclature follows that of the Royal Australasian Ornithologists' Union (1926) with subsequent amendments. Names are followed by \* if the occurrence of the species is undoubted, or (\*) if one or more locally collected specimens are held in the collections of the Queen Victoria Museum. "B" is added if the species is known to be a local breeder. If the name is not followed by an asterisk, the occurrence is noted as doubtful and requiring more positive confirmation before its inclusion in the list of local avifauna is justified.

#### HABITAT

Flinders Island is approximately 40 miles long and 15 miles wide. The terrain is irregular, rising to 2,500 feet with prominent, bare granite outcrops. The soils are mostly sandy and vary greatly in fertility. The

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island lies within the 20 to 40 inch rainfall region with July and August usually being the wettest and coldest months (mean 43°) and January and February generally the driest and hottest (mean 70°). A detailed account of the soils of Flinders Island, with a brief history, description of the physical environment and related comments, is given by Dimmock (1957). Serventy also discussed rainfall and climate of the area in relation to the Fisher Island field station and Willis and Guiler give details of the Fisher Island vegetation and intertidal ecology (Guiler, Serventy and Willis 1958).

Development has taken place mainly on the central and western parts of the island and much of the eastern half remains undeveloped and inaccessible by roads. About half the island is considered not worth development at present. Some details of land development and land usage are given by Pryor (1967b).

Though much of the island remains undeveloped, there are extensive areas which have been cleared recently and laid down to improved pasture. As an example, the Memana settlement was once an extensive undulating area of cutting rushes, heaths and grass trees, interspersed on the rising ground with dense tea-tree, stunted she-oaks, honeysuckles and heath. In the last ten years about 60,000 acres have been cleared, ploughed and sown with introduced grasses for grazing. A sample collected from a small section of unimproved country on "Dallen" has been lodged in the collections of the Queen Victoria Museum and includes spreading wattle (*Acacia diffusa*), honeysuckle (*Banksia marginata*), dagger hakea (*Hakea teretifolia*), tea-tree (*Kunzea ambigua*), manuka tea-tree (*Leptospermum scoparium*), native wallflower (*Pulteneae subumbellata*), two epacrids (*Epacris impressa* and *E. squarrosa*), cutting rush (*Gahnia psittacorum*) and an undetermined rapier sedge. Land development is also proceeding in other parts of the island where the lowland areas, in their native state, carry a range of vegetation varying according to the soil types on which it grows. Included are she-oaks (*Casuarina* spp.), honeysuckles (*Banksia* spp.), tea-tree (*Leptospermum* spp. and *Melaleuca* spp.), grass tree (*Xanthorrhoea australis*), cutting rush (*Gahnia psittacorum*), stunted eucalypts, heaths and sedges. A comprehensive account of the vegetation on the various soil types is given by Dimmock (1957).

The undeveloped hill country supports mainly dry sclerophyll forest, dominated by eucalypt species with an under-storey of mixed scrub. The gullies generally carry a rain forest type of vegetation. The upper mountain slopes are generally steep and barren with little or no vegetation.

Smith's Gully (see plate 1), which was the camp site from 14 - 22 March 1966, is a fertile valley about a mile long by a quarter mile wide, the floor of which has been sown to improved pasture for some time. Its altitude is about 200 feet and it is enclosed on three sides by steeply ascending hills which give rise to the Strzelecki ranges. A small, swift-flowing creek drains through the valley and its banks support a tall, relict rainforest vegetation.

The Memana camp site from 22 - 25 March 1966 was on the property of Mr. A. Dalgleish (see plate 2). It was adjacent to the homestead and surrounded by open, highly developed pasture land at an altitude of about 150 feet. These paddocks border an extensive area of undeveloped hill country which, one week before our arrival, had been subjected to one of the largest bush fires the island has suffered. About a quarter of the island was burnt out, the fire being so hot that it scorched the upper foliage of the tallest eucalypts, which reach to approximately 150 feet. It was on the edge of this burn, in small patches of scrub inside a fire break, that we conducted most of our collecting in this area.



## BIRD SPECIES LIST

5. Little Penguin *Eudyptula minor* \*B. Occurs in large numbers in Bass Strait and breeds in burrows on many small islands often in company with muttonbirds (*Puffinus tenuirostris*) but no breeding sites are known on Flinders Island. This bird is illegally slaughtered for crayfish bait by a small element of the fishing community.
9. Stubble Quail *Corturnix pectoralis* (\*)B. A few present in small bevvies. A female (reg. no. 1966/2/160), which was sitting on eight slightly incubated eggs, was killed by a mower at Lackrana on 16 December 1966 during harvesting operations. A pair had been seen and heard in the immediate vicinity for some days previously.
10. Brown Quail *Synoicus ypsilophorus* \*B. Occurs throughout the island and appears to be increasing. Bervies in excess of 100 birds have been seen in recent years (D.M.R.) It is very numerous on some of the smaller offshore islands. Small bevvies were regularly seen at Smith's Gully.
14. Painted Quail *Turnix varia* (\*)B. Not common but its presence and breeding were confirmed by feathers, egg shells and a specimen (reg. no. 1966/2/140) was collected in May 1966. A clutch was successfully reared by a pair of painted quail in Mrs. R. M. Fowler's garden at Emita in 1964 (R.M.F.) One was collected by the R.A.O.U. in 1912 (White and Mellor 1913).
34. Common Bronzewing *Phaps chalcoptera*. Selby's list includes "two seen at Emita."
35. Brush Bronzewing *P. elegans* (\*)B. Fairly plentiful throughout the tea-tree scrub and forest areas of the island. It was often seen and heard calling in the tea-tree scrubs near Lackrana.
45. Lewin Water-rail *Rallus pectoralis* \*B. A few in the swamplands but appear to be generally decreasing with drainage and land development (D.M.R.) A nest containing 6 eggs was found at Trousers Point in 1936 (J.B.N.) Birds answering this description occur on nearby Tin Kettle Island (D.M.R.) Cashion (1958) found them on Cat Island.
56. Dusky Moorhen *Gallinula tenebrosa* (\*)B. A subadult male (reg. no. 1968/2/209) was shot by mistake for a duck at Patriarchs Inlet on 12 April 1968. It was feeding with black ducks at the time. This follows numerous reports that the species occasionally occurs and breeds on Flinders Island. Rhodes and Nield both state that they have seen it and found its nests with eggs in the Locotta swamp before draining in 1956. K. A. Hindwood and R. Wheeler report sighting two on Scott's Lagoon in November 1948 (Sharland 1958). The Queen Victoria Museum collections include a set of three eggs taken near Trousers Point about 1935 which are consistent with those of this species. It does not occur in Tasmania.
58. Eastern Swampheh *Porphyrio melanotus* \*B. A common bird throughout the wetlands of the east coast. A number of nests with eggs, some just hatching, were found in the burnt out tea-tree swamps near Lackrana during my November 1966 visit. The adults were shy and difficult to sight.
59. Coot *Fulica atra* (\*)B. Now occurs only spasmodically but was once seen and found breeding fairly regularly in the lagoons and swamps at Locotta. No nests have been found since this land was drained in 1956 (D.M.R.) The Queen Victoria Museum has a set of six eggs collected at Trousers Point about 1935. Selby saw this bird on Scotts Lagoon.



60. Great Crested Grebe *Podiceps cristatus* \*. Two were seen by the author in Cameron Inlet on 21 September 1967.
62. Hoary-headed Grebe *P. poliocephalus* \*B. Occurs spasmodically on lagoons (D.M.R.) and 2 nests with eggs were found by Nield in the Locotta swamp on Trousers Point in October 1938 (J.B.N.) None were seen on either of my visits in 1966 but three were found in Cameron Inlet on 21 September 1967. Selby saw one near Whitemark.
65. White-faced Storm-petrel *Pelagodroma marina* (\*)B. Le Souef (1902) records a rookery on Rabbit Island (probably Briggs Islet) which, in the latter half of November 1901, contained birds with fresh or slightly incubated eggs. Mellor and White (1913) and Wheeler (1949) record similar observations. Gabriel (1894) records a rookery on Isabella Island on 11 November 1893. Atkins (1909) found a rookery on Storehouse Island. Duncan Macdonald (pers. comm.) found over 100 nests with eggs on Spence's Reef on 16 November 1959. The author found many hundreds with eggs on Forster Island off north-eastern Tasmania on 6 December 1966 (unpub. data).
71. Short-tailed Shearwater *Puffinus tenuirostris* (\*)B. The only known rookery on Flinders Island is about 2 acres in extent at Settlement Point, Emita, but it breeds in vast numbers on nearby islands. Four to five hundred thousand nestlings are "commercially harvested" each year from rookeries controlled by the Tasmanian Animals and Birds Protection Board but, despite this human predation, most rookeries are expanding. Gabriel (1894) and Campbell (1894) give some details of early visits. Serventy (1957 a, b; 1958 a, b; 1960) gives some results of his investigations. Warham (1960) studied the species on Cat Island in 1957-58. The vegetation of the Fisher Island field station is described by Gillham (1965) who also discusses some associated effects of the bird population. An unpublished field report of M.T.L.E. Vogelpoel on a visit to Mt. Chappell Island in February 1964 states in part "The young muttonbirds suffered however, as the downpour could not be absorbed quickly enough and many of the burrows filled with water, and the young birds had to leave their 'safe' hideouts. Outside they were exposed to the vicious attacks of seagulls. We spent several hours trying to save as many young muttonbirds as we could but without much success." An albino subadult (reg. no. 1963/2/24) was collected during the 1963 season.
75. Great-winged Petrel *Pterodroma macroptera* (\*). A recently dead beach-washed specimen (reg. no. 1968/2/227) was found at Marshall Bay on 13 August 1968 and sent to the Queen Victoria Museum by John Whinray. Upon dissection it was found to be an adult male in very low condition. Its gut contained a piece of material consistent with the flesh of a squid or cuttlefish. The following measurements were recorded: Weight 415 gm, total length 410 mm, wing 286, wing spread 1030, tail 123, tarsus 44.7, middle toe (ex. claw) 59.3, beak (to base of skull) 50.7, testes 4 x 3.
77. White-headed Petrel *P. lessonii* (\*). A recently dead beach-washed specimen (reg. no. 1968/2/219) was collected by Rhodes on 1 June 1968 and forwarded to the author. Upon preparation it was found to be in very low condition, and the gut to contain beaks and remains of beaks of 31 small cuttlefish. A dessicated beach-washed specimen (reg. no. 1969/2/19) was collected by D.G.F. Smith in 1968. Only two other specimens have been collected in Tasmanian waters (Wall 1956).
79. Giant Petrel *Macroneustes giganteus* \*. Known to occur in the area. Mattingley (1938) saw several on his visit to the Kent Group. Cashion

(1958) saw a single bird off Cat Island on 15 March 1958.

80. Cape Petrel *Daption capense* (\*). Rhodes found a freshly dead specimen on the Loccota beach in January 1956. It was sent to the Queen Victoria Museum and mounted for display (reg. no. 1956/2/1). Cashion (1958) recorded this species as seen from the boat, several miles south of Cat Island on 14 January 1958.
83. Fairy Prion *Pachyptila turtur* \*. This species is known to occur in the area and has been found breeding on North-east Island in the Kent Group (Mattingley 1938) and other places round the Tasmanian coast (Macdonald and Green 1964, Green and Mollison 1961). Wheeler (1949) found a dead bird on Rabbit Island (= Briggs Islet) and suggests they possibly breed there. Macdonald collected a beach washed specimen with aberrant plumage in February 1957.
- 84a. Thin-billed Prion *P. belcheri* (\*). On 18 July 1967 John Whinray found an adult female which was freshly dead on the beach of Marshall Bay on the west coast. It was in low condition and the skin (reg. no. 1967/2/15) was placed in the Queen Victoria Museum.
85. Diving Petrel *Pelecanoides urinatrix* (\*). Thousands were feeding off the east coast of Flinders Island in mid July 1968 (pers. comm. John Whinray) and a specimen (reg. no. 1968/2/226) was secured. Breeding rookeries have been recorded on Black Pyramid in western Bass Strait (Green and Macdonald 1964) and North-east Island in the Kent Group (Mattingley 1938).
88. Black-browed Albatross *Diomedea melanophrys* (\*). Cashion (1958) recorded this species several miles south of Cat Island on 14 January 1958. A recently dead beach washed specimen (reg. no. 1968/2/228) was collected on Marshall Bay beach on 25 August 1968 and sent to the Queen Victoria Museum by John Whinray.
91. White-capped Albatross *D. cauta* \*. Often seen some distance off-shore. It breeds on Albatross Island in western Bass Strait and the Mewstone off southern Tasmania (Macdonald and Green 1964).
96. Black Cormorant *Phalacrocorax carbo* \*B. Not commonly seen but, for the past 30 years, a small colony of up to 20 pairs has been known to breed in association with little pied cormorants in the dense tea-tree lining the edge of a swamp in the south-east of the island. On the occasion of my visit to the area in November 1966 a few birds were at the nesting site but no eggs or young could be found. The extensive fires of the previous summer apparently had prevented the birds from breeding, as much of the nearby tea-tree had been burnt. (see plate 3) Three were seen in Cameron Inlet on 21 September 1967.
97. Little Black Cormorant *P. ater* \*. Rarely recorded. A few were seen for a short period near Loccota about 1960 (D.M.R.)
98. Black-faced Cormorant *P. fuscescens* \*B. Common round the coast and breeds on the offshore islands. It often comes into the inland lagoons to roost at night (D.M.R.) A rookery on Storehouse Island, off the east coast is mentioned frequently in the literature of Bass Strait birds. Barrett (1925) gives a photograph of the rookery with birds at the nests.
100. Little Pied Cormorant *Microcarbo melanoleucus* \*B. Occasionally seen on the lagoons and inlets. A few pairs have been known to breed in association with black cormorants in thick tea-tree on the edge of a

swamp in the south-east of the island for the past 30 years. Though birds were present on the occasion of my visit in November 1966, breeding had apparently been prevented because of the nearby fires of the previous summer. (see plate 3) Twenty were seen near Whitemark on 20 September 1967.

104. Australian Gannet *Sula serrator* \*B. Often seen offshore. It breeds on several islands in Bass Strait and off southern Tasmania (Green and Macdonald 1964, McKean 1966). The once extensive Cat Island rookery is now virtually non-existent. Gabriel (1894) shows a photograph of the rookery taken in 1893 when he estimates about 2,500 nesting birds were present and gives an account of his visit. Further details are given by Campbell (1894) and White (1909). Atkins (1909) estimated 5,000 - 7,000 birds were nesting in the rookery in November 1908. Anderson (1936) found 800 to 1,000 birds nesting in 1935. Serventy (1949), Warham (1958) and Cashion (1958) give accounts of more recent visits when only a few birds remained. Only 12 pairs bred on Cat Island in the 1966-67 season (Vincent Serventy pers. comm.). More than 20 could be seen seawards from Patriarch Creek on 21 September 1967.
106. Australian Pelican *Pelecanus conspicillatus* \*. Up to 20 can often be seen in Cameron Inlet and lesser numbers in other sheltered waters round the coast. It breeds on a number of small islands in Bass Strait, Forster Island off north-east Tasmania being the most notable.
112. Caspian Tern *Hydroprogne caspia* \*B. A few birds all round the coast. Breeds on offshore islands and on two tidal islands in Cameron Inlet where, on 25 November 1967, a single egg which appeared to be freshly laid was found on the sand just above the high water line.
114. White-fronted Tern *Sterna striata* \*. Le Souef (1902) recorded it from the Furneaux Group but gives no locality. Duncan Macdonald (pers. comm.) has seen this species round Flinders Island on various occasions.
115. Crested Tern *S. bergii* \*B. Often seen all round the coast and breeds on various offshore islands. On 16 November 1959 Macdonald (pers. comm.) found 76 nests with eggs on Billy Goat Reef, and up to 180 nests with eggs on Spence's Reef. A flock of about 30 were resting on the shore of Cameron Inlet during a period of high winds on 25 November 1967.
118. Fairy Tern *S. nereis* \*B. Though not common, this species is regularly seen round the coast and I saw several at Cameron Inlet and Patriarch Creek in November 1967. Despite the apparent suitability of the area I did not find any evidence of breeding. Macdonald (pers. comm.) observed 36 at North-east River on 15 November 1959 and found three nests each with a single egg, apparently well developed.
125. Silver Gull *Larus novaehollandiae* (\*)B. Very common all round the coast, it also ventures over most of the island's agricultural areas where it comes to feed on grasshoppers and other pasture pests. Several hundred pairs breed annually on the tidal islands in Cameron Inlet. It also breeds in considerable numbers on many small Bass Strait islands. Hundreds were resting in sheltered paddocks near Whitemark on our visit in March 1966.
126. Pacific Gull *L. pacificus* \*B. Common all round the coast and occasionally odd birds come inland. It breeds on most of the offshore islands.
- 126a. Dominican Gull *L. dominicanus* \*. J. H. Calaby (pers. comm.) observed a single bird from the "Maggie Dan," on the evening of 23 November 1960.



It was first seen while within sight of Flinders Island and it followed the ship, in company with silver gulls and pacific gulls, for over an hour.

128. Arctic Skua *Stercorarius parasiticus* Le Souef (1902) records it from the Furneaux Group but gives no locality.
129. Turnstone *Arenaria interpres* \*. Three were seen on the tidal flats at Patriarch Creek on 22 September 1967, one still retaining prominent breeding plumage. Three were seen by Selby on the flats at Adelaide Bay.
130. Pied Oystercatcher *Haematopus ostralegus* \*B. Occurs on most sandy beaches and tidal mudflats. It breeds in the littoral zone above the beaches on Flinders and nearby islands. A nest with two eggs was found on a small sand dune at Patriarch Creek on 22 September 1967. In the summer of 1966 several were seen feeding on pasture parasites in paddocks adjacent to Cameron Inlet (D.M.R.)
131. Sooty Oystercatcher *H. unicolor* \*B. Occurs all round the coast but breeding is mostly confined to the littoral zone above the rocky shoreline. It is more shy in the selection of its nesting sites than the preceding species. Twenty were seen on the beach near Whitemark on 20 September 1967.
133. Spur-winged Plover *Lobibyx novaehollandiae* (\*)B. Very common on all the grasslands and increasing with pastoral development. Flocks of up to 200 are not unusual in the agricultural areas. Breeding was found to be well advanced on my September visit with eggs and small runners numerous.
135. Banded Plover *Zonifer tricolor* (\*)B. First noticed about 1930 when a few were seen at "Kentdale," Emita (D.M.R.) They have since increased and spread with pastoral development. Every autumn for some years a few have appeared in the paddocks on "Dallen," Memana and in March 1968 this congregation increased to about 50 (A.D.). Several small groups were present during our March visit. They were commonly seen at many places on the island during my September visit and breeding was well advanced. Several pairs were seen with small runners and at least three pairs were breeding on the Pat's River aerodrome.
138. Hooded Dotterel *Charadrius cucullatus* \*B. A few pairs are present on most of the coastal beaches of Flinders Island and adjacent islands where it breeds in the littoral zone. A nest containing three eggs was found on an island in Cameron Inlet on 25 November 1967 and another with a similar complement at Patriarch Creek the following day.
140. Double-banded Dotterel *C. bicinctus* \*. One was seen in March on the beach of Cat Island by Cashion (1958). A flock of about 30 birds (probably this species) was seen in a cultivated paddock on "Dallen," Memana by Dalglish in April 1965 and again in April 1966. They did not stay long and apparently were newly arrived migrants. Similar flocking in a cultivated paddock by newly arrived migrants in March was observed by the author near Longford, northern Tasmania in 1960 when in excess of 100 were found feeding over a 30 acre paddock. They likewise remained for only a day.
143. Red-capped Dotterel *C. alexandrinus* \*B. Common on all coastal beaches and breeds in the littoral zone. About 30 were resting with other waders, on the gravel verges of the Pat's River aerodrome on my September visit and the groundsman informed me that they occasionally nest there. It sometimes moves inland and may be seen on the shores of the receding

lagoons.

149. Eastern Curlew *Numenius madagascariensis* \*. Seen on coastal mudflats and inlets on occasions (D.M.R) Several were seen by Selby on the flats in Adelaide Bay. Two were seen at Patriarch Creek on 22 September and several were there on 27 November 1967.
150. Whimbrel *N. phaeopus* \*. One seen by Selby in Adelaide Bay.
153. Bar-tailed Godwit *Limosa lapponica* \*. Seen by Selby on the flats in Adelaide Bay. Several godwits (species not determined) were present on the same flats when I visited the area on 26 November 1967.
158. Greenshank *Tringa nebularia* (\*). Selby found it numerous on the flats in Adelaide Bay. At least one was present on 26 November 1967 and two (reg. no. 1968/2/213 - 214) were collected on 27 May 1968. Both birds, though apparently healthy, were in low condition and carried no obvious fat deposits. The stomachs were found to contain small fish (*Gobius* sp.)
161. Curlew-sandpiper *Erolia ferruginea* (\*). Four were on the gravel verges of the Pat's River aerodrome, together with some waders, on 20 September 1967.
162. Red-necked Stint *E. ruficollis* (\*). Selby saw several flocks on the flats in Adelaide Bay and one flock on the Pat's River aerodrome, almost beneath the wing of the 'plane while it "revved up" prior to take off. On my visit in September there were about 130 living on the gravel verges of the air strip and the adjacent tidal flats. None showed obvious breeding plumage. Forty were seen on the tidal flats at Patriarch Creek on 22 September 1967 and in excess of 100 were there on 27 November 1967.
163. Sharp-tailed Sandpiper *E. acuminata* (\*). Seen by Selby on the flats in Adelaide Bay and again by the author on 26 November 1967. On the same day two were found feeding over the muddy edges of Brodies Lagoon. Also recorded by Mellor and White (1913).
168. Australian Snipe *Gallinago hardwickii* \*. A few occur in the swampy areas. One was flushed several times in the swamps near Lackrana on my November 1966 visit.
187. White Egret *Egretta alba* \*. One was seen on the edge of a small island in Cameron Inlet on 22 September 1967.
188. White-faced Heron *Ardea novaehollandiae* \*B. Commonly seen in the vicinity of swamps, lagoons and tidal flats all round the coast. In 1965 and again in 1966 Rhodes found a number of nests.
191. Reef Heron *Egretta sacra* Le Souef (1902) records one pair from the Furneaux Group without giving the location.
197. Brown Bittern *Botaurus poiceiloptilus* \*B. Occasionally seen and heard in the tea-tree swamps and lagoons. The first breeding record was obtained in 1966 when a nest was found by Rhodes in a swamp on the south-east coast. I saw and heard several in this area during my visit in November 1966.
198. Cape Barren Goose *Cereopsis novaehollandiae* (\*)B. Campbell (1894) describes it as "somewhat scarce" following a visit to the Furneaux Group in November 1893, the largest flock seen being of 30 on Anderson (= Woody) Island. It was rarely seen on Flinders Island prior to 1939 but bred up considerably during the war years (1939 - 1945) and has

continued to increase ever since. It is now possible, during the summer months, to see flocks totalling up to 500 birds grazing on clover pastures in the Lackrana area (D.M.R.) In such numbers the geese cause concern to the local farmers for, during the dry months, they are attracted to the green pastures, young crops and freshwater dams, resulting in crop damage and fouling of the water, making it unpalatable for domestic stock. On 26 November 1967 I counted about 200 geese which had congregated in a clover paddock on "Kanyana" at Lackrana. This problem is localised at present and farmers in most other parts of Flinders Island have no complaints of goose damage. It does not normally breed on Flinders Island but prefers the smaller offshore islands.

203. Black Swan *Cygnus atratus* \*B. Plentiful wherever suitable water exists, particularly on the east coast, and it is a regular breeder. Rhodes does not consider it as numerous as 25 years ago. One swan banded at Moulting Lagoon, southern Tasmania, was subsequently shot on Flinders Island (Guiler 1966), a distance of about 180 miles north of the place of banding. This is not unusual as two black swans banded at Moulting Lagoon were subsequently recovered in New South Wales (Guiler 1966). This species was plentiful on Cameron Inlet on 21 September 1967 and two nests, one with five eggs and one with six eggs, were found in the rushes near the water's edge. Hundreds were present on both Cameron Inlet and Logan Lagoon on 27 November 1967.
207. Chestnut-breasted Shelduck *Tadorna tadornoides* \*B. Dalgleish has recorded flocks of up to 42 at Memana and often sees pairs on his clover paddocks during the winter months. In October 1964 a clutch of about ten were reared on a water hole at "Dallen" and on 19 September 1967 a pair were present in the same locality. A few are usually present on most coastal inlets and lagoons.
208. Black Duck *Anas superciliosa* \*B. Usually a common bird on inlets and lagoons but not so numerous as in previous years (D.M.R.) Half-grown young were seen on a tea-tree lined swamp near Loccota on 21 September 1967.
210. Chestnut Teal *A. castanea* \*B. Usually present on lagoons and inlets but not so plentiful as in past years (D.M.R.) Several clutches of well developed young were seen on a tea-tree lined creek at Lackrana on 26 November 1967. One banded by the author near Longford, Tasmania on 10 March 1961 was shot near Cameron Inlet on 14 April 1961.
211. Grey Teal *A. gibberifrons* \*. Usually present on the lagoons and inlets but in smaller numbers than in past years (D.M.R.) Frith (1962) records several recoveries of grey teal on Flinders Island, which had been banded in Tasmania and New South Wales.
212. Blue-wing Shoveler *A. rhynchotis* \*. Rarely noticed on the island. A pair were seen on a small water hole near Loccota on 21 September 1967. Selby saw five near Whitemark.
213. Pink-eared Duck *Malacorhynchus membranaceus* (\*). A single bird was shot on 9 March 1965, the skin of which is in the collections of the Queen Victoria Museum (reg. no. 1965/2/2).
215. Australian White-eyed Duck *Aythya australis* \*. Several seen by Selby.
216. Blue-billed Duck *Oxyura australis* \*B. A set of three eggs in the collections of the Queen Victoria Museum, found in a nest in rushes in a lagoon near Trousers Point about 1936, have been determined as of



this species by A. R. McEvey and N. Favaloro (pers. comm.)

217. Musk-duck *Biziura lobata* (\*)B. Varies in numbers but can usually be seen on most lagoons and coastal bays. It has been recorded breeding at Trousers Point (J.B.N.) Dart observed 83 in Adelaide Bay on one occasion but states that about 20 is the more typical. They were present on most of the east coast lagoons during my visits in September and November 1967.
219. Swamp-harrier *Circus approximans* \*B. A regular summer visitor. Odd birds may occasionally be seen during the winter months. Rhodes records the first annual appearance of south-bound birds about 26 August and north-bound birds mostly between 15 March and 20 March, usually in small parties of three to five. A few pairs breed in the swampland reed beds each summer. I saw seven individuals passing south over Memana on 20 September 1967 and two or three on most other days during that visit. It was regularly seen on the November visits.
221. Australian Goshawk *Accipiter fasciatus* \*. Single birds were seen at Smith's Gully and Memana in March 1966. J. H. Calaby (pers. comm.) saw one on the summit of the Strzelecki Peaks on 23 March 1952. Selby saw two during his visit.
222. Collared Sparrowhawk *A. cirrocephalus* (\*)B. Seen on several occasions at Smith's Gully in March. Rhodes has found it nesting in the top of Cape Barren pines and Nield found a nest situated in bushy foliage at a height of about 70 feet in a gum tree on Mt. Strzelecki in September 1935.
224. Wedge tailed Eagle *Aquila audax* \*B. Occasionally one or a pair are seen, usually in the vicinity of Mt. Strzelecki, where they have been known to breed for many years. Rhodes and Dalgleish, both progressive farmers, state that they have not known them to attack stock on the island. White (1909) records a pair and a deserted nest on top of the highest crag on Roydon Island, off the north-west coast. J. H. Calaby (pers. comm.) saw a pair on the summit of the Strzelecki Peaks on 23 March 1952.
226. White-breasted Sea-eagle *Haliaeetus leucogaster* \*B. Fairly regularly seen in pairs or individuals and several nesting sites are known, mostly in lofty gum trees (D.M.R.) A pair were often seen in the vicinity of the lambing paddocks at "Dallen" in August 1964. They did not harass stock and were seen to feed only on carrion (A.D.) Two nesting sites were visited during my September visit, near Locotta and near Cameron Inlet. A sitting bird was present on each nest.
235. Little Falcon *Falco longipennis* (\*). A pair were seen at close range by the roadside near Locotta in November 1966 and on 26 November 1967 another pair was found at Patriarch Creek. The latter pair appeared agitated by my presence and was apparently breeding in the vicinity. A single bird (reg. no. 1967/2/44) was collected near Lackrana on 26 November 1967 and was found to be feeding on a freshly caught sky lark. Its stomach also contained a quantity of flower wasps (*Thynnidae*), chafer beetles (*Scarabaeidae*) and dragon flies (*Odonata*). An adult male was shot on 5 November 1964, the skin of which is also lodged in the Queen Victoria Museum (reg. no. 1964/2/19). Its stomach was found to contain feathers, small bird bones and the remains of beetles and larvae. Rhodes is of the opinion that a pair breed on the slopes of Mt. Strzelecki. Two were seen during the R.A.O.U. campout in 1912 (Mellor and White 1913) one of which was collected and subsequently described as a new species *F. melanotus* (White and Mellor 1913). It is now regarded as synonymous with *F. longipennis*. J. H. Calaby (pers. comm.) saw one at Lady Barron on 20 March 1952.

237. Peregrine Falcon *F. peregrinus* Now rarely seen though once it was not uncommon. It used to breed in the Strzelecki ranges but is not believed to have done so in recent years (D.M.R.) A resident pair was observed on Babel Island from 13 to 15 March 1952 and a single bird was seen on the summit of Strzelecki Peaks on 23 March 1952 (pers. comm. J. H. Calaby).
239. Brown Hawk *F. berigora* (\*)B. The most common hawk and it can regularly be seen in pairs and individuals throughout the island. In March 1966 about a dozen were continually hunting for common field crickets *Gryllus servillei* which were present in large numbers in a 20 acre paddock on "Dallen," Memana. The crop and stomach of a collected bird (reg. no. 1966/2/133) was found to be distended with the remains of these insects. Breeding records are numerous.
240. Nankeen Kestrel *F. cenchroides* (\*)B. This species is rarely recorded as far south as Tasmania but a few appear to have always been present on Flinders Island. Up to three were regularly seen at Memana in March. J. W. Swift saw a single bird over Mt. Chappell Island in December 1966 which appeared to return to Flinders Island (pers. comm.) Cashion (1958) saw one on Cat Island. Several were seen on my September and November visits. They were first discovered breeding on Flinders Island in 1932 when a nest with young was found in the Strzelecki ranges. They have been found breeding on several occasions since then and sightings are not unusual (D.M.R.) It was once illegally shot by the farmers in the mistaken belief that it preyed on poultry, etc. but a campaign to enlighten the community about its protection and beneficial habits, conducted by those mentioned in the text, has resulted in it now being given complete protection. Dalglish observed one during the winter of 1967 which was feeding on common field crickets. The hovering bird would suddenly drop to the ground, seize an insect in its claw and immediately take wing. The prey was then passed to its beak, eaten in flight and the performance repeated again.
241. Osprey *Pandion haliaetus* Le Souef (1902) records it from the Furneaux Group but gives no locality. Sharland (1958) states "occasionally a bird turns up on Flinders Island."
245. Spotted Owl *Ninox novaeseelandiae* (\*)B. Seen and heard at Smith's Gully in March. The presence of one, roosting in a clump of thick tea-tree, was revealed by the continued alarm calls of many small passerines which congregated in the immediate vicinity about mid-morning. The species is generally considered to be not uncommon and Rhodes has found at least one occupied nest. The stomach of one (reg. no. 1966/2/61) was found to contain beetles and a large huntsman spider. It was heard calling at Memana and Lackrana in September 1966.
253. Sooty Owl *Tyto tenebricosa* A single bird was seen in daylight by Selby just north of the Pat's River aerodrome. Rhodes and others are of the opinion that this species lives and breeds on Flinders Island. Sharland (1958) records it from Flinders Island. It does not occur in Tasmania.
258. Musk-lorikeet *Glossopsitta concinna* Le Souef (1902) records it from the Furneaux Group but gives no locality.
267. Yellow-tailed Black Cockatoo *Calyptorhynchus funereus* \*B. Flocks of up to fifty have been seen in the past but Dart and others consider it is no longer so numerous, a result of the large land clearing operations. The species has been known to breed on Flinders Island in the hollow trunks of dead gum trees (D.M.R.), Sharland (1958). About 30 years ago Nield found a nest at a height of about 30 feet in the barrel of a dead

- tree standing in the school grounds at Altmoor. Several small flocks were seen during my visits.
273. Galah *Kakatoe roseicapilla* A single bird lived in the vicinity of Emita for several years about 1950 (D.M.R.)
285. Green Rosella *Platycercus caledonicus* (\*)B. Widely distributed over the island and plentiful in most habitat types. Rhodes and Nield state that the species is a regular local breeder and that nests have been found in the hollow limbs of gum trees in the Strzelecki ranges.
309. Swift Parrot *Lathamus discolor* \*. Birds answering the description of this species have been noticed occasionally by Rhodes and Dalgleish who believe it to breed on the island. "Fair numbers" were seen during the R.A.O.U. campout from 20 - 28 November 1912 (Mellor and White 1913).
311. Ground-parrot *Pezoporus wallicus* Campbell (1891) records it from the Kent Group. Gould procured a specimen on Flinders Island (White and Mellor 1913). I was unable to find any evidence of its continuing occurrence.
313. Tawny Frogmouth *Podargus strigoides* Selby listed one on his visit.
317. Owlet-nightjar *Aegotheles cristata* Selby listed "one flushed from hole" on the occasion of his visit.
322. Laughing Kookaburra *Dacelo gigas* (\*)B. A few were introduced in the centre of the island about 1940. They have since bred up and spread but have not yet reached the extreme north or south.
334. Spine-tailed Swift *Hirundapus caudacutus* \*. Migrating birds are seen flying northwards each autumn, usually for a period of two or three days at a time (D.M.R.)
337. Pallid Cuckoo *Cuculus pallidus* \*B. Absent during the winter months but returns to the island each spring and is commonly seen and heard during the breeding season.
338. Fan-tailed Cuckoo *Cacomantis pyrrhophanus* \*B. Absent during the winter months but commonly seen and heard during the summer. A flying juvenile was seen in November 1966 and eggs have been found by Rhodes in domed nests of small passerines.
342. Horsfield Bronze-cuckoo *Chalcites basalis* (\*)B. An adult male was collected on 14 November 1966 (reg. no. 1966/2/167) and a few other individuals were seen. Selby saw one in November 1952. Two were seen at Pat's River on 23 September 1967. It is absent in the winter months.
344. Golden Bronze-cuckoo *C. plagosus* \*B. Odd individuals were seen on the September and November visits and Selby saw one on his visit. Rhodes has seen an egg of this cuckoo in a nest of the brown scrub-wren.
357. Welcome Swallow *Hirundo neoxena* \*B. Common during the summer months and breeding pairs can be found round most homesteads where it fixes its mud nests beneath bridges, verandahs, eaves and other such sites in hay barns, sheep sheds, etc. Away from settlements, it nests beneath the sheltered ledges on rocky cliff faces or in the burnt-out trunks of trees. At the time of our visit in March most had left



the island, the only ones seen being a pair at Whitemark. Individuals and odd pairs are rarely seen in the winter months.

359. Australian Tree-martin *Hylochelidon nigricans* \*B. A regular summer visitor, common and widely distributed. It is absent in the winter months and none were seen during our visit in March 1966. Mollison (1960) saw many birds migrating northwards over the sea between Flinders and Cape Barren Island on 26 February 1958 and Cashion (1958) saw six on 3 March, apparently on migration.
360. Fairy Martin *H. ariel* Le Souef (1902) records it from the Furneaux Group but gives no locality.
361. Grey Fantail *Rhipidura fuliginosa* (\*)B. A common species throughout the year. In the areas of scrub, especially the gullies, it is most conspicuous during the summer months. It was very plentiful during all my visits.
364. Willie Wagtail *R. leucophrys* \*. Rhodes recollects seeing a single bird at Emita about 1950 and another at Lackrana in the summer of 1963-64. Dalglish knew of one at Memana for a few weeks in August 1965 and Selby saw one at Whitemark.
365. Leaden Flycatcher *Myiagra rubecula* Le Souef (1902) records it from the Furneaux Group but gives no locality.
366. Satin Flycatcher *M. cyanoleuca* \*. One female was seen at Smith's Gully on our March visit.
380. Scarlet Robin *Petroica multicolor* (\*)B. Common throughout the year and a regular breeder (D.M.R.) It was particularly noticeable during our visit in March. At Smith's Gully dozens were about the clover paddocks bordering the bush, in company with flame robins. At Memana they were just as plentiful and were conspicuous over the recently burnt hill country, the red of their breasts contrasting against the blackened background.
382. Flame Robin *P. phoenicea* (\*)B. Common throughout the island and most conspicuous in the clover paddocks bordering the bushland during our visit in March. At Smith's Gully dozens could be seen perched about the paddocks on dead thistles, fences, sticks and anywhere which afforded a "look out" point in their search for insects. At Memana they were commonly found on the recently burnt hillsides as well as the adjoining pasture paddocks. Dozens were seen in the pasture paddocks at Memana during my September visit and a nest with three eggs, was found seven feet up in dead tea-tree at Brodies Lagoon on 26 November 1967. Rhodes has found them nesting on ledges, rafters, etc. in sheds as well as the more normal broken stump or limb. Like the welcome swallow, they have readily adapted to the man-made environment. They are not common in the winter months (D.M.R.) This was the most common robin seen by Selby in November 1952.
383. Pink Robin *P. rodinogaster* (\*)B. A few occur in the upper reaches of some deep, densely vegetated gullies in the Strzelecki ranges where it has been found breeding (D.M.R.) Gabriel (1896) found it on the slopes of Strzelecki at an altitude of 1,500 feet.
386. Dusky Robin *P. vittata* (\*)B. Common and widespread throughout the island. Rhodes has found nests as early as 14 August. It was plentiful at both Smith's Gully and Memana in March.

398. Golden Whistler *Pachycephala pectoralis* (\*)B. Occurs in wooded gullies and scrub country. Pairs and individuals were often seen and heard at both Smith's Gully and Memana in the bushland and tea-tree scrubs. Rhodes has found it breeding on numerous occasions.
405. Olive Whistler *P. olivacea* (\*)B. Common in the tea-tree and scrub country, pairs and individuals being seen and heard in many areas during all visits. Selby found a nest with eggs.
408. Grey Shrike-thrush *Colluricincla harmonica* (\*)B. Common throughout the island at all times of the year particularly in the light scrub and open bush country. In March at Smith's Gully they were found to have been feeding principally on grasshoppers which were plentiful at that time.
415. Magpie Lark *Grallina cyanoleuca* \*. Rarely recorded. Selby saw a pair at Lady Barron perched on overhead wires. Rhodes saw one at Memana in 1964 and another in the same year living round a water hole at Lackrana. Dalgleish saw one at Memana in August 1965.
424. Black-faced Cuckoo-shrike *Coracina novaehollandiae* \*B. A few are present during the summer months when it breeds in the eucalypt country, but absent in the winter. None were seen during our visit in March, but odd individuals were seen in September and November.
447. Australian Ground-thrush *Oreocincla lunulata* (\*)B. A few in the dense scrubby gullies in the Strzelecki ranges and occasionally seen in the thick tea-tree scrubs on the lowlands. A pair were seen beneath dense canopy in a creek at Smith's Gully in March and one (reg. no. 1966/2/75) was found to have been feeding on wire worms and wood boring larvae. In November 1964 Rhodes found a five foot six inch tiger snake *Notechis ater* in the act of swallowing one of two half-grown nestlings. The snake had climbed up through the dense, slightly leaning tea-tree scrub to a height of ten feet to reach the nest. Mattingley (1938) found it on Deal Island in the Kent Group.
448. White-fronted Chat *Epthianura albifrons* (\*)B. Common and widespread but showing a preference for the edges of open swamp lands, water-logged areas, or along the banks of creeks and drains. Small flocks were a common sight at Memana on both visits and in March they were often seen working over the edge of the freshly burnt ground adjoining the clover paddocks. Rhodes has found nests as early as August and a nest with three half-grown young was found by the roadside at Lackrana on 23 September 1967. They often breed in the coarse grasses on small offshore islands.
473. Tasmanian Thornbill *Acanthiza ewingii* (\*)B. A number of thornbills were collected at Smith's Gully, Memana and Lackrana, all of which were found to be of this species. Juveniles just out of the nest and being tended by adults were seen on several occasions during the September visit. A nest composed of fine strips of tea-tree bark and containing an addled egg was found at a height of two feet in a small dense bush growing in an open swamp at Memana on 19 September 1967. It is a very common bird throughout the island occurring in all types of scrub and bushland habitat from the coast to the uppermost reaches of the gullies in the Strzelecki range. As a result of these observations I believe that this is the only *Acanthiza* species on the island. Mellor and White (1913), referring to *A. ewingii*, state "Flinders Island abounds with this Tit" but later White (1913) after some confusion considered the birds in question were *A. diemenensis* (= *A. pusilla*). Mack (1936) records *A. ewingii* as being the only *Acanthiza* species on Flinders



Plate 1. Bob Smith's Gully in the foothills of the Strzelecki ranges and the camp site from 14 - 22 March 1966.



Plate 2. "Dallen," the no. 1 block of the Memana settlement which was the camp site from 22 - 25 March 1966 and other subsequent occasions.





Plate 3. One of the lagoons in the south-east of Flinders Island. The extensive fires in March 1966 devastated most of the dense tea-tree and scrub which surrounded this and other lagoons in the area.



Plate 4. Habitat of the tawny-crowned honeyeater near Locotta in a coastal strip between the Strzelecki Peaks and the south coast.

Island. In Tasmania it appears to be confined to the rain forests and wet gullies, rarely if ever occurring on the dry hillsides, this latter habitat being occupied by its near relative the brown thornbill (*A. pusilla*). On Flinders Island *A. ewingii* is far less restricted and occurs in typical *A. pusilla* habitat as well as in the wet gullies. Selby found an occupied nest which was of *A. ewingii* type placed about two feet above the ground but the activity of the birds rendered identification doubtful.

475. Brown Thornbill *A. pusilla* Littler (1913) considers this species occurs on Flinders Island and White (1913) includes it when he changes his opinion previously expressed (Mellor and White 1913). I consider these determinations to be erroneous and that the species in question is in fact *A. ewingii* (see 473).
487. Scrub Tit *Acanthornis magnus* Le Souef (1902) records scrub tit *Sericornis magna* from the Furneaux Group in 1901 but fails to give the locality. It may occur in the upper reaches of the dense relict rainforest gullies on the Strzelecki ranges but despite some searching I was unable to locate it.
495. Brown Scrub-wren *Sericornis humilis* (\*)B. Because of the complexity of speciation in the genus *Sericornis* and in conformity with the opinions of Campbell (1935) and Mayr (1937), I have tentatively included the Flinders Island race within this species. It was found to be a common bird throughout the whole island wherever thick vegetational cover exists. A sample collected from Smith's Gully, Memana and Lackrana was examined by Mr. A. R. McEvey, Curator of Birds at the National Museum of Victoria who considered them to be fairly typical of the Victorian *S. frontalis*. Later collecting in northern Tasmania has produced a number of specimens which are likewise similar to the Victorian and Flinders Island birds. Sub-adults collected at Lackrana in November 1966 were mostly more brownish and lacking of the white eyebrow as are the sub-adults in Tasmania. These were possibly several months old, as flying young still tended by adults were numerous during the September visit. The Tasmanian and Flinders Island birds were found to be considerably larger and heavier than those from Victoria. Though the sample is small and many of the *S. frontalis* skins lack the necessary data for good comparisons, the figures given in the accompanying table (mean in brackets) indicates a size gradient from the large Tasmanian race to its smaller Victorian near relative. The size difference between Tasmanian and Flinders Island birds is less significant and supports the inclusion of the Flinders Island race within the species *S. humilis*.

LOCALITY	WEIGHT (gm)	TOTAL LENGTH (mm)	WING SPAN (mm)
Tasmania	11 14.5 - 20 (18.2)	126 - 145 (134.5)	173 - 195 (184.5)
Flinders Is.	13 14.5 - 19 (17.1)	130 - 148 (133.7)	160 - 196 (177.5)
Victoria	6 12.5 - 20 (14.2)	115 - 130 (121.7)	130 - 161 (143.5)

Campbell (1901) recorded it from the Furneaux Group and Littler (1910) also lists it from the Kent Group. White and Mellor (1913) described it as a new species *S. flindersi*. Ridpath and Moreau (1966) discuss its affinities to *S. frontalis* and Ridpath reports having seen "birds which appear to be of both species close together."

Mayr (1937) groups *S. humilis* with *S. maculatus*, *S. frontalis* and *S. baccarii* in a widely ranging superspecies *S. frontalis*. He gives the

range of *S. humilis* as Tasmania and the islands of Bass Strait and states "This species is clearly a representative of *frontalis*, with which it is connected by the various races on the islands of Bass Strait and southern Victoria." The present data indicates a size gradation across Bass Strait and that plumage variations occur mainly as a result of aging and sex.

500. Striated Field-wren *Calamanthus fuliginosus* Le Souef (1902) listed it from the Furneaux Group without giving any location.
522. Little Grassbird *Megalurus gramineus* (\*). The distinctive call of this species was heard in the thickly growing reeds of two lagoons on the east coast in November 1966. White (1909) found it near Killiecrankie and it was seen and collected during the R.A.O.U. campout in 1912 (Mellor and White 1913) and subsequently described by White and Mellor (1913) as a new species but this is now considered synonymous. White (1909) and Cashion (1958) found it on Cat Island and the Queen Victoria Museum holds two specimens (reg. no. 1968/2/210 - 211) collected on Tin Kettle Island.
524. Reed Warbler *Acrocephalus australis* Le Souef (1902) lists it from the Furneaux Group without giving the locality.
526. Southern Emu-wren *Stipiturus malachurus* Le Souef (1902) lists it from the Furneaux Group without giving the location.
529. Superb Blue Wren *Malurus cyaneus* (\*)B. Common throughout the island at all times of the year and occurring in all habitats from the coast to high in the Strzelecki ranges. A pair were found feeding a flying young cuckoo (*Chalcites* sp.) at Locotta on 23 November 1967.
547. Dusky Wood-swallow *Artamus cyanopterus* \*. None were seen during our visit in March but odd individuals were there in November 1966 and November 1967. Rhodes does not recall ever finding them breeding on Flinders Island and considers that they occur only as passing migrants. Selby saw four pairs in November 1952. Dalglish saw a migrating flock of about 50 at Memana on 20 April 1966 and others at Palana about the same time. Approximately 100 were present in the vicinity of "Dallen," Memana during the week following 1 May 1968. None were seen during my September visit but on 17 September several dozen apparently newly arrived migrants were seen at Exeter in northern Tasmania.
565. Spotted Pardalote *Pardalotus punctatus* \*B. Not observed during our visit of March but in November 1966 I found a pair feeding flying young, and a brooding bird tending a nest in a hole in a sandy roadside cutting near Locotta. They can occasionally be heard calling in the eucalypts but do not appear to be a common species. Selby saw only three.
567. Striated Pardalote *P. striatus* (\*)B. Not observed during our March visit but a number were seen and heard on the November visits when I found several occupied nesting in tree cavities and in road cuttings near Lackrana.
571. Forty-spotted Pardalote *P. quadragintus* Le Souef (1902) recorded it from the Furneaux Group but gives no locality. Campbell (1903) also records it from King Island.
574. Grey-breasted Silvereye *Zosterops lateralis* (\*)B. Very numerous during our March visit when flocks in excess of a hundred were seen



regularly feeding on the green fruit of tea-trees growing along the creek in Smith's Gully. They were continually on the move and appeared to be passing through on migration. The species is found all over the island, many remaining throughout the winter.

578. White-naped Honeyeater *Malithreptus lunatus* Campbell (1891) lists it from the Kent Group and White (1909) records it also on Deal Island. However, it is suggested that these authors may have mistakenly determined the somewhat similar *M. validirostris* or *M. affinis* for this species.
582. Strong-billed Honeyeater *M. validirostris* (\*)B. A few were present in the tall eucalypts growing on the slopes of Smith's Gully during the March visit and were calling almost continually as they fed amongst the upper foliage. A few were also seen at Lackrana in November 1966 and Cameron Inlet in September 1967. White climbed to a nest situated high up in thick eucalypt foliage during the R.A.O.U. campout of 1912 (Mellor and White 1913) and found it contained two almost naked young.
584. Black-headed Honeyeater *M. affinis* (\*)B. Not seen at Smith's Gully or Memana in March but a few were seen at Lackrana on both November visits. They were continually on the move in the upper foliage of the eucalypts and gave every indication of tending nests. During the September visit they were not uncommon at Memana, Locotta and Cameron Inlet. Selby saw several on his visit.
591. Eastern Spine-bill *Acanthorhynchus tenuirostris* (\*)B. Rhodes considers that this species is now much rarer than previously. It is widely distributed but is seen only occasionally. It was described as scarce in 1912 by Mellor and White (1913). One (reg. no. 1966/2/121) was collected at Memana in March and several were seen at Killiecrankie on 22 September 1967. Salomonsen (1966) considers that Flinders Island is probably included in the range of his King Island subspecies *A. t. regius* which he separates from all other subspecies on "the very long bill, measuring 32 mm, with a wing of 71 mm." The measurements were taken from a subadult male in the collections of the American Museum of Natural History (reg. no. 693497). The Flinders Island specimen (reg. no. 1966/2/121) is an adult female with a bill length (measured to the base of the skull) of 25 mm, tarsus of 19 mm and wing of 59 mm. These measurements are nearly similar to those of the Tasmanian population.
593. Tawny-crowned Honeyeater *Gliciphila melanops* (\*)B. I searched for this bird on both the 1966 visits but failed to see it. On my September visit I found it near Locotta (see plate 4) and at Killiecrankie. In both localities it was living in a rather specialised habitat, the most prominent feature of which was the grasstree (*Xanthorrhoea australis*). Stunted cabbage gums (possibly *Eucalyptus pauciflora*) and honeysuckle (*Banksia marginata*) were scattered throughout the area. A sample of the vegetation was collected from the Killiecrankie area and lodged in the Queen Victoria Museum. It also includes manuka tea-tree (*Leptospermum scoparium*), purple bottle-brush (*Myrtaceae squamea*), spreading wattle (*Acacia diffusa*), common heath (*Epacris impressa*), twiggy bearded heath (*Leucopogon virgatus*), clusted guinea flower (*Hibbertia fasciculata*) and a fine rapier sedge which was not determined. Only odd tawny-crowned honeyeaters were seen and heard in the Locotta area but near Killiecrankie the species was very conspicuous and vocal. On occasions upwards of a dozen could be seen flying above the vegetation and sometimes rose to a height of several hundred feet as they passed overhead. Two males were collected (reg. nos. 1967/2/21 - 22). Their testes were enlarged to 7 mm by 5 mm but

no nests were located. Much of this habitat is periodically burnt and in consequence it is then not suitable for occupancy by these birds for some years. Both areas where it was found are destined for pastoral development in the near future but there are other areas with little agricultural potential which could support good populations if the firing could be controlled. It occurs on adjacent Cape Barren Island (pers. comm. Jim Napier) and Selby saw several some distance north of Pat's River airport. A "fair number" were seen on the R.A.O.U. campout in 1912 and "found in swampy country" (Mellor and White 1913). Mattingley (1938) found it on Deal Island in the Kent Group.

616. Yellow-throated Honeyeater *Meliphaga flavicollis* (\*)B. Common throughout the island in a wide variety of habitat. It was regularly seen at Smith's Gully and on the recently burnt hillsides at Memana in March.
630. Crescent Honeyeater *Phylidonyris pyrrhoptera* (\*)B. Widely distributed but nowhere common.
631. Yellow-winged Honeyeater *P. novaehollandiae* (\*)B. Common in a wide range of habitat types. It was regularly seen on the recently burnt hillsides at Memana in March. Subadults were common at Smith's Gully in the same month. It was considered "thinly distributed over the island" in 1912 (Mellor and White 1913). Salomonsen (1966) regards the Bass Strait population as subspecifically distinct.
637. Little Wattle Bird *Anthochaera chrysoptera* Le Souef (1902) lists it from the Furneaux Group but gives no locality.
639. Yellow Wattle Bird *A. paradoxa* Le Souef (1902) lists it from the Furneaux Group but gives no locality.
647. Australian Pipit *Anthus australis* \*B. Occurs in most agricultural and grazing areas though nowhere in large numbers. In March a pair were seen at Smith's Gully in a fallowed paddock and in November 1966 at Lackrana several pairs were found in clover paddocks bordering light scrubland. Mellor and White (1913) considered it to be thinly distributed over the island in 1912. Its present numbers are now greatly exceeded by the introduced skylark which has apparently benefited from pastoral development.
650. Beautiful Firetail *Zonaeginthus bellus* (\*)B. A few small parties were seen at Smith's Gully and Memana in March and other observers have seen them in various other localities. At Smith's Gully they were regularly seen feeding on the ground in clover paddocks bordering a densely forested creek and, when disturbed, sought shelter in that cover. Rhodes considers they are now rarer than in past years and states that they nest mostly in the she-oak trees (*Casuarina* sp.) He has noticed a high rate of infertility in their eggs, with usually one and sometimes more being left addled in the nests.
690. Raven *Corvus mellori* \*B. This is the only *Corvus* species so far determined from Flinders Island and Tasmania (pers. comm. Ian Rowley). It occurs commonly all over the island. Small parties were seen on the Memana paddocks in March and appeared to be feeding on pasture parasites. Rhodes has seen many occupied nests usually in eucalypts growing in forest country.
696. Black Currawong *Strepera fuliginosa* (\*)B. Fairly common and widespread. They nest in tall trees in the eucalypt forests but are often seen feeding in the open grazing country. One (reg. no. 1966/2/36)

collected at Smith's Gully in March was found to have been feeding on grasshoppers which were very numerous at that time. Four were seen in the Whitemark township on 23 September 1966.

699. Clinking Currawong *S. arguta* Recorded as not numerous by White and Mellor (1913).
702. Grey Butcher-bird *Craticus torquatus* Le Souef (1902) lists it from the Furneaux Group but gives no locality.
707. White-backed Magpie *Gymnorhina hypoleuca* \*B. An introduced species, liberated at Emita about 1940 and now gradually increasing in numbers and distribution, though still very localised. A few have been released at Memana in recent years and appear to be becoming established. A pair nested in a tall eucalypt near the Memana-Whitemark road in 1965 (A.D.) Robinson (Plomley 1966) records "an abundance of Magpies" on Anderson (= Woody) Island on 10 November 1830 but the possibility that he was referring to *S. fuliginosa* (sometimes called "black magpie") must not be overlooked.

#### INTRODUCED FOREIGN SPECIES

991. Black-bird *Turdus merula* (\*)B. Introduced on the island about 1930: the first evidence of breeding was a nest found at Locotta in 1932 (D.M.R.) It multiplied rapidly and is now common and widespread. Areas of tea-tree swamp are greatly favoured and it appears well adapted to this natural environment, which in many instances is still relatively unaffected by the influence of human settlement. Selby found it very common in 1952. Mattingley (1938) found several on Deal and Hogan Island in 1938.
993. Skylark *Alauda arvensis* (\*)B. The date and locality of introduction appears unknown but it was first noticed by Rhodes in the vicinity of Happy Valley, between Whitemark and Locotta, about 1928. It is now very numerous throughout the agricultural areas and, on the expansive newly developed pastures at Memana, it has greatly increased its numbers with the spread of cultivation. It was very spectacular on all my visits. Despite extensive searching no nests could be found and a sample collected in November 1966 revealed that they were then some time off laying, testes of the males being approximately 1 x 1 mm and ovaries of the females about 0.2 mm in diameter. Display flights and singing were being vigorously carried on and it was possible to see dozens of individuals in the air and on the ground at any time of the day. Distribution is not confined to the improved pastures as many birds were found resting in recently burnt scrub land bordering the clover paddocks.
995. House Sparrow *Passer domesticus* \*B. This introduced species has been common for many years. I have been unable to ascertain the date of its introduction but it has probably been present since early settlement. It is rarely, if ever, seen in unaltered bushland but prefers to remain in and around the townships and farm homesteads where small flocks are a regular sight. Two were found on Deal Island in the Kent Group in 1890 (Le Souef 1891). Cashion (1958) found it on Cat Island.
996. Goldfinch *Carduelis carduelis* (\*)B. Common and fairly widespread for many years. It appears to benefit from land clearing and settlement and shows a preference for agricultural areas. Land development for farming purposes appears to result in an increase of its numbers.
997. Greenfinch *Chloris chloris* \*B. First recorded by McGill and Wheeler



in 1948 (Tarr 1950). Rhodes first noticed it in the Locotta area in 1953 and it is now not uncommon in that locality.

999. Starling *Sturnus vulgaris* \*B. Very numerous throughout the island for many years. Flocks of many hundreds are often seen in the pastoral areas.

Pheasant *Phasianus colchicus* var. \*B. Pheasant have been liberated at various places throughout the island over the last ten years and appear to be breeding.

#### OTHER LAND VERTEBRATES

Le Souef (1929) gives an annotated list of the mammals from some of the islands of eastern Bass Strait and it is interesting to compare his remarks on populations with the present situation. It is apparent that the rapid depletion of the fauna to which he refers has not continued as most species today are numerically strong. It seems probable that the introduction of large dogs to the Bass Strait islands could have affected drastically the mammal fauna in the early nineteenth century. Robinson (Plomley 1966) found dogs in considerable numbers in 1830, apparently introduced by the sealers and spread by the natives. Robinson estimated at least 200 on the islands between Flinders and Cape Barren Island and states that "most of the islands are infested with wild dogs." None occur in a feral state today.

Spiny Ant-eater *Tachyglossus setosus*. Not uncommon throughout the island and occurring in a variety of shades of colour from cream to deep brown. One cream animal (reg. no. 1966/1/16) was collected at "Dallen," Memana in March.

Red-necked Wallaby *Wallabia rufogrisea*. Very plentiful throughout the bushlands, causing some damage in agricultural areas where it grazes on crops and pastures bordering its diurnal retreats. Despite the effects of land clearing, fires and the snaring of animals for the fur market in the past years (Le Souef 1929), it remains abundant.

Pademelon *Thylogale billardieri*. Common throughout the thick scrubby areas, invading agricultural land like the preceding species. This animal and *W. rufogrisea* are now used by some commercial fishermen as bait in crayfish pots.

Potoroo *Potorous tridactylus*. Very rare. Rhodes has seen only two in about thirty years of observations, though he has seen tracks on several occasions. Mr. Ralph Morton Snr flushed one at Settlement Point in 1965 (pers. comm. D. L. Serventy). A decayed carcass was found following the extensive fires of 1966 (pers. comm. J. Hope). The Australian Museum holds a specimen (no. M4398) collected at Lady Barron in September 1928 and it is assumed that this is the specimen referred to, with dimensions, by Le Souef (1929).

Wombat *Vombatus ursinus*. Le Souef (1929) "presumed that the last of them had gone" following enquiries he made in 1928 and it appears to have been very rare about that time. It is now common throughout the bushlands where it burrows extensively in the light sandy soil. Dense clumps of tea-tree adjoining improved pastures are a favourite habitat.

Brush-tail Possum *Trichosurus vulpecula*. The grey colour phase, similar to those of the Tasmanian midlands and north-east, is common in the bushland and agricultural areas but the black phase, which is dominant in western and southern Tasmania, does not occur on the island. Old

"reds" and "reddish greys" appear more common in areas close to the coast (D.M.R.)

Tasmanian Ring-tail *Pseudoecheirus convolutor*. Not uncommon throughout the island, often seen and heard calling in the tea-trees round the camp at Smith's Gully. Le Souef (1929) obtained two males and a female and from these described a subspecies *P. c. bassianus* (holotype male Aust. Mus. no. M4450; allotype female Aust. Mus. no. M4449). Troughton (1965) supports this subspecific rank.

Pigmy Possum *Cercartetus nanus*. An adult female in a torpid condition was found in a Launceston woolstore on 6 May 1965 inside a bag of wool which had just been received into the store from Flinders Island. It is now in the spirit collection of the Queen Victoria Museum (reg. no. 1966/1/20). Rhodes has found them on several occasions, usually in a cavity in the decaying stump of a grass tree.

Short-nosed Bandicoot *Isoodon obesulus*. Le Souef (1929) obtained two skins with skulls (Aust. Mus. nos. M4451 - 4452) from West Sisters Island and gives dimensions. The species still survives there today and is often seen at dusk in the vicinity of introduced boxthorn bushes beneath which it appears to hide during the day time (pers. comm. John Whinray). We were unable to find evidence of any bandicoots occurring on Flinders Island, though J. A. Kershaw's unpublished field notes mention seeing signs of bandicoots near Killiecrankie on 12 January 1909. These diggings were more probably made by ant-eaters, as residents of many years have never found bandicoots on Flinders Island.

Tiger Cat *Dasyurops maculatus*. Gabriel (1894) includes it in a short list of mammals encountered in the Furneaux Group in November 1893.

Quoll *Dasyurus viverrinus*. Le Souef (1929) states "are reported as still being seen on Flinders and Barren Island." There are no recent reports of its presence.

Little Marsupial-mouse *Antechinus minimus*. A very large male (reg. no. 1961/1/12) was sent to the Queen Victoria Museum from the Blue Rocks area in June 1961. I saw a large *Antechinus* sp. crossing a bush track in dense tea-tree scrub near "Dallen," Memana at dusk on 23 March 1966. A subadult male (body weight 19.5 gm, reg. no. 1967/1/52) was captured at Locotta on 25 November 1967. Le Souef (1929) obtained a single specimen (Aust. Mus. no. M4342) from Clarke Island.

Yellow-footed Pouched-mouse *A. flavipes*. Le Souef (1929) records a specimen (*Phascogale flavipes flavipes*, Aust. Mus. no. M4459) collected from West Sisters Island in November 1928. This specimen was incorrectly determined and is in fact *Sminthopsis murina*.

White-footed Pouched-mouse *Sminthopsis murina*. Le Souef (1929) records one from Clarke Island (Aust. Mus. no. M4343) and in addition the Australian Museum holds two skins and skulls, no. M4459 referred to above and no. M4584, collected by A. S. Le Souef on 12 April 1929 also from West Sisters Island. This latter skin is, however, not consistent with examples of the Tasmanian race and suggests the possibility of an island subspecies. An animal, resembling this species, was recently found nesting in the pocket of an old coat hanging in a shed on West Sisters Island (D.M.R.)

Grey-headed Fruit-bat *Pteropus poliocephalus*. One was found feeding on a bag of apples in a shed on Babel Island off the east coast of

Flinders Island at Easter 1955 and is now in the collections of the Tasmanian Museum, Hobart (Sharland 1962). Nield found one at night on the beach of Dog Island during the muttonbird season in April 1958. It had been attracted by discarded apples and was captured by hand and subsequently released. It returned again the following night, was recaptured and sent to a private zoo in southern Tasmania.

Little Brown Bat *Eptesicus pumilus*. The Queen Victoria Museum holds a spirit specimen (reg. no. 1959/1/4) collected at Emita on 12 November 1947. A few small bats are seen at various times (D.M.R.)

Lesser Long-eared Bat *Nyctophilus geoffroyi*. Stephen Rhodes collected an adult female (reg. no. 1968/1/19) near Whitemark on 11 March 1968. John Whinray collected an adult male (reg. no. 1968/1/28) in an old house on West Sisters Island on 5 February 1968.

Eastern Water-rat *Hydromys chrysogaster*. Not uncommon in the drainage systems and round the coastline. Nield found them occasionally to kill and eat domestic fowls.

Eastern Swamp-rat *Rattus lutreolus*. Two males, with testes enlarged to 21 x 13 mm, were trapped in a dense tea-tree swamp near "Dallen," Memana in September 1967. They have been spirit preserved in the Queen Victoria Museum collections (reg. nos. 1967/1/39 and 1967/1/40). A female (reg. no. 1967/1/53) was trapped at Locotta on 24 November 1967. Its nipple complement of T2 + I2 = 8 was in conformity with that of the Tasmanian subspecies *R. l. velutinus*. Several were collected by J. Hope in 1966 (pers. comm.) and Rhodes collected an adult female (reg. no. 1967/1/55) on 28 November 1967 during land clearing operations at Locotta.

#### INTRODUCED FOREIGN MAMMALS

Ship Rat *Rattus rattus*. This introduced species fluctuates throughout the island. It was common in the tea-tree scrub at Smith's Gully in March and a subadult female (reg. no. 1966/1/15) was trapped. It was plentiful at Lackrana in September 1967 and ten were trapped in 60 trap nights. They were all adult but none of the six females appeared pregnant or to be suckling young. The testes of the males were large (to 21 x 11 mm). Blacks, greys with grey bellies and greys with cream bellies were included in the bulk sample which was retained for the collections of the Queen Victoria Museum (reg. no. 1967/1/41).

European House Mouse *Mus musculus*. Introduced with early settlement and now common throughout the island. Several were trapped in the dense tea-tree scrub at Smith's Gully and in a hay barn at Memana during our March visit. Baled grass hay stacked in the open paddocks was infested with mice. This was apparently the attraction for nankeen kestrels and brown hawks which were often seen in the vicinity of these stacks. In September one was trapped in a thick tea-tree swamp from which velvet-furred rats were trapped.

Rabbit *Oryctolagus cuniculus*. The unpublished notes of J. Kershaw record rabbits on Edith Island in the Kent Group in 1909. Despite rigid laws which prohibit the introduction of rabbits, a number have been found on Flinders Island over the past 15 years. The first sighting was of a single rabbit about five miles north-east of Emita on 31 July 1952. Others were subsequently seen in the area but it is believed that this introduction was of castrated bucks only. They appear to have been successfully eradicated as none have been seen since 1955. Another introduction was reported at Costers Road,



Lady Barron in November 1963 and 15 were killed in the area between 8 and 19 November. In March 1965 more were found about a mile north and in October 1965 one was shot on "Wallanippi" near Smith's Gully. In June 1966 two were brought in by air from New South Wales but these were confiscated and destroyed before release. Following every reported occurrence the Tasmanian Department of Agriculture and local residents have made determined efforts to eradicate the rabbits by the use of traps, dogs, guns, myxomatosis and extensive poisoning and as a result 49 have been known to have been killed. It now appears that their efforts have been successful as no evidence can be found to indicate that any rabbits remain on Flinders Island (pers. comm. C. E. Holmyard, Senior Vermin Inspector, Department of Agriculture).

Hare *Lepus europeus*. Introduced to and established on the West Sisters Island for some years (D.M.R.)

Feral Cat *Felis catus*. Occurs throughout the island but is now less common than in previous years (D.M.R.)

Feral Pig *Sus scrofa*. Common in the Strzelecki ranges and other bushlands. Though not seen at Smith's Gully in March 1966 there were extensive areas of freshly uprooted ground as evidence of its presence in the adjacent scrub. Several young ones were seen in the upper reaches of a dense gully above Locotta in November 1967.

#### AMPHIBIA

An account of the amphibia of Flinders Island is given by Littlejohn and Martin (1965). In the course of our visits in 1966 we recorded all and only those six species accredited by them to the island.

Spotted Marsh-frog *Limnodynastes tasmaniensis*. Heard calling from the swamps in numerous localities on each visit. In September it was calling vigorously and laying in many swampy areas. A few were collected (reg. no. 1967/4/6).

Burrowing Marsh-frog *L. dorsalis*. Heard calling from the swamps in numerous localities on each visit. It was calling vigorously during my September visit and was just commencing to lay. One was collected (reg. no. 1967/4/4).

Brown Froglet *Crinia signifera*. Heard calling and collected at Memana (reg. no. 1967/4/3) in March. A few were calling at various localities in November 1966. It was calling vigorously in September and a sample (reg. no. 1967/4/8) was collected.

Smooth Froglet *C. laevis*. MacKay (1955) includes this species in the herptofauna of Flinders Island, but Littlejohn and Martin (1965) express the opinion that the single specimen in question was erroneously determined and was in fact *C. signifera*.

Brown Tree-frog *Hyla ewingi*. Heard calling in many localities in March and a few collected (reg. no. 1967/4/1). A few were calling at Lackrana in September and November.

Green and Golden Tree-frog *H. aurea*. The remains of several which appeared to have been half eaten by birds were found at "Dallen," Memana in March. Many were calling from the swamps at Lackrana in November. On my September visit a few were heard calling.

Toadlet *Pseudophryne semimarmorata*. Calling vigorously from marshes and drains in many localities in March and a sample collected (reg. no. 1967/4/2) from Memana. One was collected at "Dallen," Memana in September (reg. no. 1967/4/7).

## REPTILIA

The reptiles of the Furneaux Islands are discussed by MacKay (1955) and Rawlinson (1967) both of whom collected specimens from the area. Comments on the species encountered during the visits of the present author, together with material from the area held in the Queen Victoria Museum are as follows:

Rock Lizard *Egernia whitii*. Mrs. D. M. Rhodes sent me a single specimen (reg. no. 1964/3/1) collected on 13 January 1964. M.T.L.E. Vogelpoel collected a short series (reg. no. 1967/3/17) at Trousers Point on 17 April 1965.

Southern Blue-tongue Lizard *Tiliqua nigrolutea*. Several were found dead on the road at various times. One was caught in a snap trap baited with raw meat and set for rats at Lackrana in September.

Tussock Skink *Leiopisma entrecasteauxi*. This species is recorded by MacKay (1955) and Rawlinson (1967).

Three-lined Skink *L. trilineatum*. Four were collected at Memana in March 1966 (reg. no. 1967/3/12) and Mrs. D. M. Rhodes has forwarded to the Queen Victoria Museum a subadult (reg. no. 1967/3/1) collected on 6 January 1967. It was the most common lizard at Lackrana on my September visit and seven (reg. no. 1967/3/38) were collected.

Metallic Skink *L. metallicum*. Common in many localities and five (reg. no. 1967/3/11) were collected. Vogelpoel collected three (reg. no. 1967/3/13) on Mt. Chappell Island in November 1966. It was plentiful at Lackrana in September and three (reg. no. 1967/3/27) were collected.

Small-scaled Skink *L. pretiosum*. This species is included by Rawlinson (1967) in his Flinders Island reptile list on the basis of a single specimen (no. D911) held in the National Museum, Melbourne. Stephen Rhodes collected a female (reg. no. 1967/3/25) at Locotta on 3 September 1967 and another (reg. no. 1967/3/33) at Lackrana on 25 November 1967.

Spotted Skink *L. ocellatum*. Vogelpoel collected one (reg. no. 1967/3/14) on Mt. Chappell Island in November 1966. Stephen Rhodes collected a subadult (reg. no. 1968/3/5) at Locotta on 14 January 1968.

Bougainville's Skink *Rhodona bougainvillii*. MacKay (1955) collected a single specimen on Babel Island on 14 March 1955. A single specimen (reg. no. 1968/3/10) collected at Bull Point, Babel Island in the last week in April 1968 was sent to the Queen Victoria Museum by John Whinray. It was said to have been taken on the surface of the ground in a rookery (muttonbird) area. A number were collected on Waterhouse Island off north-east Tasmania by the author on 17 August 1962 (Green 1965) and subsequently a single subadult came to hand from Cape Portland on the mainland of north-eastern Tasmania in June 1964 (reg. no. 1967/3/9).

Mountain Dragon *Amphibolurus diemensis*. One was collected by Mrs. D. M. Rhodes in January 1964 (reg. no. 1964/3/2). Two were collected at

"Dallen," Memana in November 1966 (reg. no. 1967/3/18) and one was collected at Killiecrankie in September 1967 (reg. no. 1967/3/29).

Copperhead Snake *Denisonia superba*. One was collected at "Dallen," Memana in March and another at Lackrana in September. A small specimen of only 190 mm long and in a semi torpid state was collected from beneath dead grass at "Dallen," Memana on 20 September 1966. From the unpublished field diary of J. Kershaw, written on the occasion of a visit to an unnamed island near Mt. Chappell Island on 12 January 1909 he states "A Copperhead Snake was seen and an endeavour was made to secure it. It entered a Mutton Bird burrow and evidently bit the bird wh. came out of the burrow immediately and at once dropped dead (about 60 seconds)."

White-lipped Whipsnake *D. coronoides*. Two (reg. no. 1967/3/10) were collected at "Dallen," Memana on 23 March 1966.

Tiger Snake *Notechis ater*. Worrell (1963a) separates the tiger snake of the Furneaux Islands from other *Notechis* species and he (Worrell) 1963b) describes it as a subspecies *N. a. serventyi*. Vogelpoel visited Mt. Chappell Island on three occasions from 1963 to 1966 and has kindly supplied me with the following information. The first visit was in March 1963 when, in the course of one hour, 11 snakes were collected, all being between four and five feet in length. The second visit was made in February 1964 when over the five day period 85 snakes were collected. Of these, the smaller ones were released and only the largest specimens retained. From details supplied by Vogelpoel the following table has been compiled.

Measurements of 17 tiger snakes from Mt. Chappell Island, February 1964.

	WEIGHT (ozs)	TOTAL LENGTH (mm)	NUMBER OF SCALES		
			mid body	ventral	subcaudal
Maximum	50	1362	17	178	54
Minimum	8	790	17	164	44
Mean	22.3	1096.7	17	166.7	48.3

Only two of this series were lodged in the collections of the Queen Victoria Museum (reg. nos. 1966/3/19 - 20). His field notes show all 17 snakes collected were females and none showed evidence of pregnancy. Stomach contents consisted of mutton bird (*P. tenuirostris*) chicks, except in two cases, one of which was empty and the other contained a mouse (*M. musculus*). Fat deposits were extremely heavy, ticks were invariably present in the region of the head and neck and endoparasitic worms were plentiful in many instances. Vogelpoel's field notes state in part "we witnessed a snake swallowing a young mutton bird. In less than 10 minutes the two foot six inch snake had managed to dispose of the developed young mutton bird" and again later, "We were interested to see that the weather seemed to have no effect on the snakes. We saw several even under the worst conditions" (referring to heavy rain). The third visit was made from 4 - 8 November 1966 when 24 snakes were collected and only 12 additional sightings made. This collection was purchased by the Queen Victoria Museum and registered as a bulk sample (reg. no. 1967/3/16). The series includes both sexes and ranges in length from 915 to 1515 mm. Ovaries were well developed but showed no embryonic development. In one



specimen they measured to 46 x 13 mm. From these remarks it is obvious that there has been a decrease in the number and average size of Mt. Chappell Island snakes. Worrell (1963a) described them as "a giant race with an average maximum length of nearly six feet and a known maximum of eight feet." When naming the subspecies he (Worrell 1963b) states, in part, under "diagnosis" "A giant robust race abounding on Chappell Island and commonly exceeding six feet in length." The largest snake collected by Vogelpoel barely exceeded five feet (measured after preservation) and was taken on his third visit when the numbers present appeared to be greatly reduced.

#### PISCES

Frankenberg (1967) discusses the galaxiid fishes of Flinders Island. We collected a small sample of freshwater galaxiids (reg. no. 1967/5/5) from the stream running through Smith's Gully. These have been determined by Mr. E. O. G. Scott as *Galaxias truttaceus scopus* Scott 1936. In November 1967 a sample collected from Chew Tobacco Creek at Lackrana included *G. attenuatus* (reg. no. 1967/5/32) and *Taeniomembras microstoma* (reg. no. 1968/5/12).

On 14 February Stephen Rhodes collected a fresh-water flathead *Pseudaphritis bursinus* (reg. no. 1969/5/17) in Locotta Creek, about a mile up stream from the coast.

Eels occur commonly in the creeks and drains and one lamprey species has been caught (D.M.R.)

#### DISCUSSION

About 151 species of birds have been recorded from the Furneaux Group of islands. They include two introduced Australian and seven introduced non-Australian species. A number of these records are doubtful and others require confirmation.

The collections of the Queen Victoria Museum include representatives of 59 species (including one introduced Australian and three introduced non-Australian) all of which have been collected recently on Flinders Island. An additional 69 species (including one introduced Australian and four introduced non-Australian) can be regarded as occurring there either permanently or with a reasonable degree of regularity. In my opinion the remaining 23 species require confirmation. Additional birds, particularly among the waders and oceanic species, can be considered as "probables" and further collecting and field observations will no doubt expand the present list.

Eighty-eight birds have been found breeding on Flinders Island or on other islands in the Furneaux Group. Further investigation will probably prove additional species to be local breeders.

Of the 14 endemic Tasmanian species listed by Ridpath and Moreau (1966) nine occur on Flinders Island and all, with the possible exception of the swift parrot which requires confirmation, are known to breed locally.

The reef heron, though once regularly recorded from the islands in Tasmanian waters, is now rarely if ever encountered there and it has been excluded from the list of confirmed species.

Of the two *Strapera* species which occur in Tasmania only the black currawong *S. fuliginosa* was found by us, though White and Mellor (1913)

record *S. arguta*. In Tasmania *S. fuliginosa* normally favours the high-lands and rain forests, its place being taken in the lowlands by *S. arguta* (Sharland 1958)

The endemic Tasmanian native hen *Tribonyx mortierii* does not occur on Flinders Island, apparently being confined to its present range by its flightlessness. However, its near relative, the dusky moorhen, which occurs occasionally on Flinders Island, has not been found in Tasmania. There are no positive records of the Australian coot breeding in Tasmania though it has been found breeding on Flinders Island on several occasions.

The nankeen kestrel, rarely seen and with only one "possible" breeding record in Tasmania (Sharland 1952), is not uncommon on Flinders Island and breeds there fairly regularly. Indications are that it has benefited from pastoral development which has provided it with an increase in invertebrate foods. It has been seen more regularly in recent years, particularly in the Memana district.

Perhaps even more noteworthy are those species which are absent though they occur commonly in Tasmania and on the Australian mainland. In addition to those doubtfully recorded in the bird species list I have been unable to find any record of crane species, masked owl *Tyto castanops*, white cockatoo *Kakatoe galerita*, eastern rosella *Platycercus eximius*, yellow-tailed thornbill *Acanthiza chrysorrhoa*, and noisy miner *Mysantha melanocephala*.

Following the visit of the Royal Australasian Ornithologists' Union to Flinders Island in 1912, when the camp out was held near Lady Barron from 20 - 27 November, White and Mellor (1913) listed 65 bird species as seen in the area. With few exceptions, and apart from habitat alteration, their remarks indicate that the numerical status of most species has not declined to any extent since that time. The black-faced cormorant appears greatly reduced, probably due to the destruction of birds on the breeding rookeries by fishermen.

Some species show a marked numerical increase. The only reference made by White and Mellor (1913) to Cape Barren geese is of a single bird flushed from a small island in Franklin Sound and they fail to mention sighting such species as eastern swamphen and spur-winged plover. These birds would have been conspicuous if they were then anywhere near their present numerical status.

The absence of the dusky woodswallow from their list, together with the rarity of sightings except for migrating birds, adds support to the impression that few if any remain on Flinders Island to breed.

Land clearing and pastoral development has reduced the populations of some species simply by the alteration of habitat but this, in turn, has favoured species of the open grasslands. Perhaps the most spectacular population increase has occurred in the spur-winged plover which, over the last half century, has increased from what must have been a rare bird to one of the most common species. A similar increase has also occurred in Tasmania. The banded plover appears to be likewise favoured by pastoral development.

All the introduced species apparently are continuing their numerical increase, the most spectacular being the sky lark. This bird is now a striking feature wherever pastoral development has taken place, undoubtedly assisted by habitat alteration.

Some local naturalists assure me that some small passerine species such as robins and chats have increased in recent years and my own

observations support this impression. However, in the long term, many must decline in numbers as their preferred habitat continues to decrease with the land clearing and pastoral development.

It is inevitable that much more of the Flinders Island landscape will soon be changed to open pasture land and as development extends, acquisition of areas for natural reserves becomes more difficult and costly. There is an excellent area reserved in the Strzelecki Ranges and Logan Lagoon, with an area of adjoining land, recently has been proclaimed as a sanctuary but there are additional lowland areas on the east coast where such conservation measures could well be extended. The present demand for preservation of wetlands emphasises the need to save more of the eastern swamps and lagoons together with areas of the surrounding habitat which support numbers of local waterfowl and possibly forms an important link for migrating species moving between south-east Australia and Tasmania. Similarly, the preservation of a sample of the original environment in the Memana district should not be overlooked while a little still remains.

#### ACKNOWLEDGEMENTS

I wish to express my thanks to the people mentioned in the text who have given freely from their knowledge of the island's fauna which, in some instances, spans almost a lifetime. Especially I wish to thank Mr. Alex Dalglish, Mr. David Rhodes and Mr. Eric Warren who kindly provided transport and accommodation during my visits and generally assisted in so many ways. Thanks are also due to Ansett-ANA for the transport of personnel and equipment to and from the island, to Mr. & Mrs. Jack Williams for hospitality and assistance, to Mr. Tom Burns for determining the botanical samples and Mr. W. J. M. Vestjens for some gut analysis.

The manuscript has been read by Dr. D. L. Serventy, Mr. J. H. Calaby and Mr. M. G. Ridpath, all of whom offered useful criticism for which I am most grateful.

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